

APPENDICES

Appendix A

Appendix B

Appendix C

APPENDIX A

A. JURISDICTION

These rules and regulations governing the construction of roads and streets shall apply within the Portland, Tennessee Planning Region. (See Illustration A-1.)

ILLUSTRATION A-1
PORTLAND PLANNING JURISDICTION

APPENDIX B

**STREET CONSTRUCTION AND DRAINAGE
SPECIFICATIONS STANDARD DRAWINGS**

SECTION I

GENERAL

A. PURPOSE

The purpose of these specifications is to establish standards of design and construction, including construction procedures and quality of materials, that are adequate to assure the safety, convenience, and welfare of the people within the planning jurisdiction.

B. DEFINITIONS

1. **Local Government** - The city or county government having jurisdiction within the area where a development is located.
2. **Enforcing Officer** - That individual designated by the local government to receive and review plans submitted in conformance with the provisions of this section.
3. **Engineer** - An engineer certified and registered by the State Board of Architectural and Engineer Examiners pursuant to Section 62-202, Tennessee Code.
4. **Enforcing Officer** - That individual designated by the chief executive officer of the local government to enforce these provisions.
5. **Standard Specifications** - Standard Specifications for Road and Bridge Construction, Tennessee Department of Transportation, Bureau of Highways, Nashville, Tennessee, March 1, 1995, and subsequent revisions and additions.
6. **A.A.S.H.T.O.** - American Association of State Highway and Transportation Officials.
7. **A.S.T.M.** - American Society for Testing Materials.
8. **Basic Regulations** - The basic subdivision regulations of Portland Planning Region to which this material is attached as an appendix.

C. APPROVALS

All construction plans shall be prepared and submitted to the Enforcing Officer. The content and submission procedure shall be as set forth in SECTION II, PLANNING.

D. ACCEPTANCE

Acceptance for public maintenance of any facilities or improvements located within any subdivision may only be accomplished by formal action of the governing body in the manner established in Subsection 3-101.7, Basic Regulations. Any approval of plans, etc., submitted in conformance with these provisions, shall not in any manner bind or presuppose acceptance of these facilities by the governing body.

E. RESPONSIBILITY FOR COMPLIANCE

In all matters involving enforcement of, or compliance with, the provisions contained herein, the subdivider (as defined in Basic Regulations, Section 6-102) is considered as the party legally responsible for performance; and the use of engineers, contractors, or other agents shall in no way diminish or absolve the subdivider of this basic responsibility.

SECTION II

PLANNING

A. PLAN PREPARATION

All construction plans for improvements within land subdivisions shall be prepared by engineers registered to practice within the State of Tennessee. The plans shall bear the stamp and signature of the individual responsible for their preparation.

B. CONTENT

The information set forth in Section 5-103, Basic Regulations, shall be required upon each and every plan submitted hereunder. In any instance where special conditions may warrant, additional data may be required.

C. SUBMISSION, REVIEW, AND APPROVAL

When the plans are complete, with all required data entered thereon, they shall be submitted to the Enforcing Officer for review and comment prior to formal presentation before the planning commission. If the Enforcing Officer finds that the plans are in order and all required information is presented, he shall forward the plans to the planning commission for review and approval. Should any disagreement between the Enforcing Officer and the subdivider (or his engineer) arise as to the nature of, or requirement for, any particular improvement or facility, the plans may be forwarded to the planning commission for arbitration of the dispute.

Action by the planning commission may come in the form of unconditional approval of the plans as submitted, conditional approval, or disapproval. Should the commission's action come in the form of conditional approval, the applicant may modify and resubmit the plans to the Enforcing Officer for further review. Should the Enforcing Officer find that the conditions established by the commission have been met, he may so certify in which instance the plans shall be considered approved. Should the commission act to conditionally approve the plans and no subsequent action is pursued by the subdivider (or his engineer) for a period of six (6) months following the date on which action was taken by the planning commission, the plans shall become null and void and any subsequent action shall require submission of new plans.

D. ACTION UPON APPROVAL

Once the plans and preliminary subdivision plat have received approval, construction may begin.

SECTION III
TYPICAL SECTIONS

TYPICAL ROADWAY SECTIONS

LOW AND MEDIUM DENSITY URBAN RESIDENTIAL ACCESS LANE

SD - 101

TYPICAL ROADWAY SECTIONS

HIGH DENSITY URBAN RESIDENTIAL ACCESS LANE

SD - 102

TYPICAL ROADWAY SECTIONS

**LOW AND MEDIUM DENSITY
URBAN RESIDENTIAL ACCESS STREET**

SD - 103

TYPICAL ROADWAY SECTIONS

LOW AND MEDIUM DENSITY RURAL RESIDENTIAL ACCESS LANE AND STREET

SD - 104

TYPICAL ROADWAY SECTIONS

HIGH DENSITY URBAN ACCESS STREET

SD - 105

TYPICAL ROADWAY SECTIONS

LOW AND MEDIUM DENSITY URBAN RESIDENTIAL COLLECTOR STREET

SD - 106

TYPICAL ROADWAY SECTIONS

LOW AND MEDIUM DENSITY RURAL RESIDENTIAL COLLECTOR STREET

SD - 107

TYPICAL ROADWAY SECTIONS

**HIGH DENSITY URBAN RESIDENTIAL COLLECTOR
OR
LOW AND MEDIUM DENSITY URBAN COMMUNITY COLLECTOR**

SD - 108

TYPICAL ROADWAY SECTIONS

HIGH DENSITY URBAN COMMUNITY COLLECTOR STREET

SD - 109

TYPICAL ROADWAY SECTIONS

RURAL COMMUNITY COLLECTOR STREET

SD - 110

TYPICAL ROADWAY SECTIONS

NON-RESIDENTIAL ACCESS STREET

SD - 111

TYPICAL ROADWAY SECTIONS

NON-RESIDENTIAL COMMUNITY COLLECTOR

SD - 112

TYPICAL ROADWAY SECTIONS

STANDARD CUL-DE-SAC DETAIL

DRAWING C-1

TYPICAL ROADWAY SECTIONS

STANDARD OFFSET CUL-DE-SAC DETAIL

C-2

**TYPICAL ROADWAY SECTIONS
SPECIAL CUL-DE-SAC DETAIL**

DRAWING C-3

TYPICAL ROADWAY SECTIONS

TYPICAL INTERSECTION & CURB DETAIL

DRAWING C-4

SECTION IV
MATERIALS SPECIFICATION
AND CONSTRUCTION PROCEDURES

A. PRELIMINARY WORK

1. Location and Protection of Underground Utilities

Prior to beginning excavation or grading, the subdivider shall determine, insofar as possible, the actual locations of all underground utilities in the vicinity of his operations and shall clearly mark them so that they can be avoided by equipment operators. Where such utility lines or services appear to lie in the path of construction, they shall be uncovered in advance to determine their exact location and depth and to avoid damage due to excavation or grading operations. Existing facilities shall be protected during construction or removed and replaced in equal condition, as necessary.

Should any existing utility line or service be damaged during or as a result of the subdivider's operations, the subdivider shall take such emergency measures as may be necessary to minimize damage and shall immediately notify the utility agency involved. The subdivider shall then repair the damage to the satisfaction of the utility agency or shall pay the utility agency for making the repairs. In all cases the damaged structure shall be in as good or better condition as before the damage occurred.

2. Surveying and Staking

The subdivider shall be responsible for his own surveys and establish his own grades unless otherwise directed by the enforcing officer.

3. Removal of Obstructions

The subdivider shall be responsible for the removal, safeguarding, and replacement of fences, walls, structures, culverts, street signs, billboards, shrubs, mailboxes, or other obstructions which must be moved to facilitate construction. Such obstructions shall be restored to at least their original condition.

4. Clearing and Grubbing

The subdivider shall be responsible for cutting, removing, and disposing of all trees, brush, stumps, roots, and weeds within the construction area. Disposal shall be by means of chippers, landfills, or other approved methods not in conflict with state or local ordinances.

Care shall be taken to avoid unnecessary cutting or damage to trees not in the construction area. The subdivider shall be responsible for loss or damage to trees outside the permanent easement or rights-of-way.

5. Traffic Control and Safety

The subdivider shall provide and maintain access to and from all properties along the line of his work. The subdivider shall also provide temporary bypasses and bridges where necessary to route traffic and shall maintain them in a safe and usable condition whenever, in the opinion of the enforcing officer, detouring of traffic to parallel routes cannot be done without hardship or excessive increase in travel by the public.

Where single-lane by-passes are provided the subdivider shall furnish signalmen to control traffic operations and minimize delays.

The subdivider shall provide, erect, and maintain adequate barricades, warning signs, and lights at all excavations, closures, detours, points of danger, and uncompleted pavement.

B. ROADWAY CONSTRUCTION

1. Stripping, Stockpiling, and Placing Topsoil

All topsoil shall be stripped within the street right-of-way and from any other area designated by the enforcing officer. Topsoil shall be stored in stockpiles. All organic matter within the right-of-way shall be stripped and disposed of unless directed otherwise by the enforcing officer.

A two (2) or three (3) inch layer of topsoil shall be placed where seeding is required or where required by the enforcing officer.

After the stockpiled topsoil has been placed as specified above, the area where the topsoil was stockpiled shall be neatly graded and dressed.

2. Excavation

Excavation shall conform to limits indicated on the plans. Excavation materials shall be removed in such manner that the slopes can be neatly trimmed. Excavation shall not be made below grade except where rock or stone masonry is encountered or undercutting of unstable materials is required. Materials removed below grade shall be replaced with approved materials thoroughly compacted. Where borrow materials are required to complete embankments or fills the subdivider shall be responsible for providing them.

Rock excavation shall be removed to a minimum depth of twelve (12) inches below the subgrade and backfilled with approved materials which shall be thoroughly compacted.

Where a spring or seepage water is encountered that is not provided for on drainage plans it shall be reported to the enforcing officer.

3. Fills and Embankments

Embankment and fill materials shall be free from frost, stumps, trees, roots, sod, or muck. Only materials from excavation or borrow pits, or other materials approved by the enforcing officer shall be used. Materials shall not be placed on frozen ground.

Where excavated materials are used in fill construction and the materials consist of earth and various grades of rock, the fills shall be carefully constructed with the larger or hard rock on the bottom followed by the smaller or soft rock and finally the earth fill to provide a well-compacted and void-free embankment.

All depressions or holes below the natural ground surface, whether caused by grubbing, rock removal, undercutting, or otherwise, shall be filled with suitable materials and compacted to ground surface before fill construction is started.

Backfilling around a structure shall have been completed and thoroughly compacted to ground surface before any embankment materials are placed thereon.

Embankments shall be so constructed that adequate surface drainage will be provided at all times.

Fill areas shall be compacted by a sheep's foot roller, to a density of not less than ninety-five (95) percent of optimum density and within three (3) percent of optimum moisture content per ASTM D 698, and each lift of fill materials shall be rolled until the roller "walk out".

Fill materials shall be placed in eight (8) inch lifts, maximum thickness. Where excavated materials consist mainly of rock too large to be placed in the normal eight (8) inch thickness without crushing or further breaking down the pieces, such materials shall be placed in the fill in layers not exceeding three (3) feet in depth. No rock larger than eighteen (18) inches in dimension shall be placed in fill. Care shall be taken to fill all voids between large rock and to assure that fill materials are compacted such that settling is minimized. Compaction of the top six (6) inches of cuts or fills shall be accomplished with pneumatic-tire rollers.

Backfill around structures shall be of crushed stone or earth meeting the approval of the enforcing officer; and the fill shall be placed and compacted in eight (8) inch lifts and brought up evenly on all sides of the structure.

4. Undercutting

This work shall consist of the removal and disposal of unsatisfactory materials below grade in cut sections or areas upon which embankments are to be placed. It shall also include undercutting for pipes and box culverts where required.

Known areas to be undercut shall be designated on the materials approved by the enforcing officer. The backfill materials shall be placed in eight (8) inch lifts and compacted as specified for fill construction.

Disposal of unsatisfactory materials shall be approved by the enforcing officer.

5. Subgrade Construction and Preparation

The subgrade shall be prepared in reasonably close conformity with the lines and grades as shown on the plans.

Grading of subgrade shall be performed in such manner as to provide ready drainage of water. Ditches and drains shall be maintained to provide proper drainage during construction.

Hauling over finished subgrade shall be limited to that which is essential for construction purposes, and all ruts or rough places that develop in a completed subgrade shall be smoothed and recompact. Soft areas shall be removed and replaced with crushed stone or as directed by the enforcing officer.

The subgrade shall be checked and approved by the enforcing officer for adherence to the plans before any base materials are placed.

6. Shoulders and Slopes

All shoulders and slopes shall be trimmed and shaped to conform with the cross sections shown on the plans and as specified in Section C-5, below. Rock cuts shall be sealed of all loose fragments, projecting points, etc., so as to leave a clean and neat appearance. Shoulders shall be completed where required as shown on the plans and shall be double bituminous surface treated, with care being taken to protect the surface and edges of pavement. Shoulder materials shall be placed in uniform layers and compacted by overlapped rolling of both base course and pavement. The finished shoulder shall be firm against the pavement.

C. BASE AND PAVING

1. Base Stone

After the sub-base has been inspected and approved by the Enforcing Officer, a base shall be constructed of the width and thickness indicated in the selected roadway cross-section.

The base course of stone shall be placed and compacted in layers or lifts upon the prepared subgrade to a finish thickness as described and shown on the plans. No single layer or lift shall exceed six (6) inches in depth.

The base course shall be a mix of mineral aggregate conforming to the technical specifications set forth in Section 303, Standard Specifications.

The aggregate base shall not be spread on a subgrade that is frozen or that contains frost. The base shall be placed and spread in uniform layers or lifts without segregation of size; each layer shall be compacted to a thickness no greater than four (4) inches. The stone shall be mixed with graders or other equipment until a uniform mixture is obtained. Each layer shall be compacted by rolling with alternate blading until a smooth, even, and uniformly compacted finish is obtained.

The base stone shall be graded and rolled while it is still moist from the pugmill mix. If the enforcing officer determines that the mix is too dry, water shall be added with a distributor tank truck while the stone is being graded and rolled. Compaction shall be uniform for the entire width of the roadway until a density of eighty (80) percent of the solid volume has been achieved. Placement and compaction of each layer shall be approved by the enforcing officer before materials for the next successive layer are placed.

No pavement shall be placed until the stone base has been approved by the Enforcing Officer.

2. Prime Coat

After the base stone has been prepared as outlined above, a bituminous prime coat shall be applied uniformly over the surface of the base by the use of an approved bituminous distributor. The prime coat shall be applied at the rate of the three-tenths (3/10) gallon per square yard, using Grade RC-70 or RC-250, or refined tar Grade RT-2, RT-3, or emulsified asphalt, Grade AE-P. If, after the bituminous materials have been applied, they fail to penetrate before the time that the roadway is to be used by traffic, dry cover materials shall be spread at a rate established by the enforcing officer, (between eight (8) and twelve (12) pounds per square yard) to prevent damage to the primed surface. An excess of cover materials shall be avoided. No succeeding stage of construction shall be placed upon the prime coat until it has properly cured. Aggregate for cover materials shall be Size No. 78 or 8.

In addition to these general requirements, unless otherwise stipulated, all materials and methods of installation shall conform to the technical specifications set forth in Section 402, Standard Specifications.

3. Tack Coat

A tack coat shall be applied to old or existing pavement surface or to a previously prepared base or surface to provide bond for an overlaid course. The tack coat shall be applied at the rate of one-tenth (1/10) gallon per square yard using materials and methods of installation set forth in Section 403, Standard Specifications.

4. Asphalt Base Mix

Upon completion of the application of the prime coat, or tack coat, an asphaltic concrete (hot mix) base shall be applied. The base mix shall be the thickness shown on the detail sheet for that class street. All materials

and methods of installation shall conform to the technical specifications set forth in Section 307 and Section 407, Standard Specifications. The base mix shall be constructed of Grade BM (B-modified) materials, described in Section 903.06, Standard Specifications.

Suitably sized samples for the determination of thickness and density of the completed pavement may be removed and tested, as directed by the Enforcing Officer. the contractor shall replace without cost where samples are removed. If the deficiency in composition, density and thickness exceeds the requirements specified, they shall be removed and replaced by the contractor. Only materials that have been demonstrated by test as satisfactory for the intended use will be accepted.

5. Asphaltic Wearing Surface

The final asphalt wearing surface shall not be placed until a minimum of seventy-five (75) percent of the residences served by the street are complete, any potholes in the binder have been repaired, the binder has been leveled, and where curbs are provided, the backfill behind such placed and compacted.

Upon approval of the Enforcing Officer the final wearing surface may be applied. The wearing surface shall be the thickness shown on the detail sheet for that class street. All materials and methods of installation shall conform to the technical specifications set forth in Section 411, Standard Specifications, for asphaltic concrete surface. The wearing surface shall be constructed of Grade D or E materials, described in Section 903.11, Standard Specifications, and shall utilize asphaltic cement Grade RT-4 or 5, or TRCB-5 or 6, as set forth in Section 904, Standard Specifications.

Suitably sized samples for the determination of thickness and density of the completed pavement may be removed and tested, as directed by the Enforcing Officer. the contractor shall replace without cost where samples are removed. If the deficiency in composition, density and thickness exceeds the requirements specified, they shall be removed and replaced by the contractor. Only materials that have been demonstrated by test as satisfactory for the intended use will be accepted.

6. Shoulders

Shoulder construction shall be completed by blading, moistening as necessary, and by thoroughly compacting. The shoulders shall be the width and thickness shown on the typical section as required herein and covered with a double bituminous service treatment. The surface shall be prepared as directed in advance of the surface construction. Upon completion of the prime coat, a double bituminous surface treatment shall be applied with the first course being at a rate of between 0.38 and 0.42 gallons per square yard. If the width of application is wider than the distributor, each width of spread shall not be less than one-half (1/2) the surface to be treated. Areas inaccessible to the distributor shall be treated either with hand sprays or pouring pots. Immediately after each

application of bituminous materials has been made, it shall be covered uniformly with Size No. 6, mineral aggregate. The aggregate shall be allowed to cure for a length of time to be determined by the chief enforcing officer before the second application is begun.

The second application of bituminous materials shall be applied in the same manner as the first application, at a uniform rate of between 0.30 and 0.35 gallons per square yard. Mineral aggregate, Size No. 7, shall then be spread in the same manner as for the first spread at a rate between twenty (20) and twenty-five (25) pounds per square yard.

Immediately after each spread of cover aggregate, uniform coverage shall be achieved by hand brooming. Additional aggregate shall be placed by hand on thin or bare areas.

Immediately after spreading and brooming the cover aggregate, the entire surface shall be rolled, beginning at the edges and progressing to the edge of the pavement. Rolling shall begin within thirty (30) minutes after the aggregate had been spread. The same rolling and curing procedures required in making the first application shall be repeated in making the second application.

D. DRAINAGE SYSTEM DESIGN

1. Ditching and Channelization

This work shall consist of the construction of ditches adjacent to roadway shoulders and feeding to and from culverts under or adjacent to the roadway. All drainage ditches shall be graded in their entirety during the time the roadways are being graded; such grading shall be completed prior to final inspection of the roadways.

2. Stabilization of Ditches

All open ditches shall be stabilized in accordance with the following requirements:

Size of Nearest Culvert (Upstream)	Seeding Required	To Be Sod Required	Concrete Lined
15"	Grades 1.00%-3.00%	Grades 3.00%-12.00%	Grades Exceeding 12.00%
18" thru 24"	Grades 1.00%-1.50%	Grades 1.50%-7.00%	Grades Exceeding 7.00%
30" thru 36"	Grades 1.00%-1.50%	Grades 1.00%-4.00%	Grades Exceeding 4.00%
42" thru 72"	Grades	Grades 2.50% or Less	Grades Exceeding 2.50%

3. Concrete Ditch Paving

Concrete ditch paving shall consist of the construction of paved ditches on a prepared subgrade. The subgrade shall be shaped and compacted to a firm even surface. All soft materials shall be removed and replaced with acceptable materials and shall be compacted as directed by the enforcing officer.

Concrete ditch pavement shall be four (4) inches in thickness throughout and shall be backfilled immediately after the concrete has set and the forms have been removed. The backfilled materials shall be thoroughly compacted. Expansion joints shall be located as directed by the enforcing officer.

4. Culverts and Storm Drains

This work shall consist of the construction of pipe culverts and storm sewers as shown on the plans. **No metal pipe shall be used** without approval of the chief enforcing officer. Reinforced concrete pipes shall conform to minimum standards for Class III, Reinforced Pipes, A.S.T.M. C76.

Bedding for pipe culverts shall be Class "B" material. Pipes shall be bedded on a six (6) inch thickness of Class "B" material and backfilled to a depth of thirty (30) percent of the diameter of the pipes. Recesses shall be dug in the bedding materials to accommodate the fill. Class "B" bedding shall be Size No. 7, as shown in Chart No. 903.23, of the Tennessee Department of Highways Standard Specifications. Culverts and storm drains in existing roadways shall be backfilled to the depth of the cut.

5. Headwalls

Concrete headwalls shall be constructed at both ends of cross drains as shown and detailed on the standard drawings included herein.

6. Catch Basins

This work shall consist of constructing catch basins complete within inlets, outlets, and inverts. Tops and inlets shall be constructed to conform to roadway grade so that drainage can easily be caught and no ponding created. Catch basins shall be constructed as shown and detailed on the standard drawings contained herein.

7. Box Culverts and Bridges

Design of box culverts and bridges shall be submitted to the enforcing officer for approval before construction is permitted. These designs shall be stamped and signed by a licensed engineer in the State of Tennessee, before submittal to the City for approval.

8. Extruded Concrete Curb or Formed Curb with Gutter

Concrete curbs or curbs with gutters shall conform to the standard drawings as detailed herein. Concrete for curbs and gutters shall be Class "A", at thirty-five hundred (3,500) psi. Curbs and gutters shall be constructed to the lines and grades shown on the plans, or as designated by the enforcing officer. The final subgrade for curbs and gutters shall be carefully graded and compacted to an even density and shall be smooth and true to grade.

Formed curbs with gutters shall be constructed in sections of uniform length of approximately ten (10) feet, unless, otherwise, shown on the plans or directed by the chief enforcing officer. Expansion joints shall be formed at intervals of approximately fifty (50) feet using three-fourths (3/4) inch thick joint filler.

The contractor shall backfill behind all curbs. Parallel ditches behind and adjacent to curbs and gutters will not be allowed.

Concrete shall be tested in accordance with provisions set forth in A.A.S.H.O. T-22, by a private testing laboratory. the frequency of testing shall be two tests for each fifty (50) cubic yards, and fraction thereof, placed in one day. Test specimens are to be made and cured in accordance with A.A.S.H.O. T-23. The, aforesaid, tests will be conducted at the expense of the developer and test results shall be submitted to the Enforcing Officer.

E. FINAL DRESSING, SEEDING, AND SODDING

1. Final Dressing

This work shall consist of dressing all slopes and areas to within reasonable close conformity to the lines and grades indicated on the plans, or as directed by the enforcing officer. Final dressing shall be performed by hand or machine to produce a uniform finish to all parts of the roadway including embankments, ditches, etc. Rock cuts shall be cleaned of all loose fragments; side slopes shall be laid back to a three to one (3:1) slope and seeded as described in these specifications.

The entire right-of-way shall be cleaned of all weeds and brush and all structures both old and new shall be cleared of all brush, rubbish, sediment, or other objectionable materials.

2. Seeding

In all areas damaged or disturbed by the construction operation where established ground cover was present before beginning of construction, the subdivider shall be responsible for restoring the ground cover after completion of construction, unless noted otherwise on drawings. All areas seeded shall be graded smooth prior to seeding and the subdivider shall be responsible for maintenance of the smooth finished grade until grass is established.

After designated areas have been carefully hand graded, soil shall be prepared for fertilizing and seeding. Fertilizer shall be a standard commercial fertilizer Grade 15-15-15, or equivalent, and shall be applied at a rate of not less than ten (10) pounds per one thousand (1,000) square feet. The fertilizer shall be lightly harrowed, raked, or otherwise incorporated into the soil for a depth of approximately one half (1/2) inch. The subdivider shall be responsible for any regrading or reseeding required to produce an acceptable grass cover. Rutting and washing shall be restored by reseeding and strawing; in areas of extreme erosion sodding may be required. The seed shall be as follows:

<u>Name</u>	<u>Percent by Weight</u>
Lespedeza	20
Serices Lespedeza	15
Kentucky 31 Fescue	40
English Rye	15
White Dutch Clover	5
Weeping Love Grass	5
or	
Kentucky 31 Fescue	55
Redtop	15
English Rye	20
White Dutch Clover	5
Weeping Love Grass	5

The seed shall be sown uniformly at the rate of one and one-half (1 1/2) pounds per one thousand (1,000) square feet.

3. Sodding

Sodding shall consist of furnishing and placing sod at all locations shown on the plans, or as directed by the enforcing officer. Work shall include the furnishing and placing of new sod, consisting of live, dense, well-rooted growth of permanent grasses free from johnson grass and other obnoxious grasses or weeds, well suited for the soil on which it is placed. All sod shall be cleanly cut in strips having a uniform thickness of not less than two and one-half (2 1/2) inches. Sod shall be set when the soil is moist and favorable to growth. No setting shall be done between October 1 and April 1, without permission of the enforcing officer. The area to be sodded shall be brought to the lines and grades shown on the plans, or as directed by the enforcing officer.

The surface of the ground to be sodded shall be loosened to a depth of not less than one (1) inch with a rake or other device. If necessary, it shall be sprinkled until saturated for a minimum depth of one (1) inch and kept moist until the sod is placed. Immediately before placing the sod, fertilizer and lime shall be applied uniformly to the prepared surface of the ground. Fertilizer shall be applied at the rate of eight (8) pounds of Grade 15-15-15, or equivalent, per one thousand (1,000) square feet.

Sod shall be placed as soon as practical after removal from the point of origin, it shall be kept in a moist condition during the interim. Sod shall be carefully placed by hand on the prepared ground surface with the edges in close contact and, as far as possible, in a position to break joints. Each strip of sod laid shall be fitted into place and tamped. Immediately after placing, the sod shall be thoroughly wetted and rolled with an approved roller. On slopes of two to one (2:1) or steeper, pinning or pegging may be required to hold the sod in place.

The sod shall be watered as directed by the enforcing officer for a period of two (2) weeks. The subdivider shall not permit any equipment or materials to be placed on any planted area and shall erect suitable barricades and guards to prevent equipment, labor, or the public from traveling on or over any area planted with sod.

F. INSPECTION OF WORK

1. Notice of Work Beginning

Prior to the beginning of construction, the contractor shall notify the chief enforcing officer in writing at least twenty-four (24) hours in advance.

2. Precedence

Should the specifications in the contract documents differ from those contained herein, the most stringent shall take precedence, unless specified in writing by the chief enforcing officer.

3. Testing and Inspection

The Portland Enforcing Officer shall be supplied a copy of all construction plans, profiles and specifications required by these regulations. All results of tests required by these regulations shall be provided to the Enforcing Officer.

G. STANDARD DRAWINGS

The purpose of this section is to include drawings of details for construction. These drawings are to be used in conjunction with the specifications.

Details concerning the construction of sewer and service lines shall be referenced to the specifications for collector sewers, service lines, and house connections for Portland, Tennessee.

Any special construction problems or conditions not covered by these specifications or drawings, shall be submitted to the Portland Municipal-Regional Planning Commission for approval.

The following Standard Drawings are included in this section:

- B-4 - Reinforced Concrete Headwall**
- B-5 - Area Drain**
- B-6 - Straight Endwall for Circular Pipe**
- B-7 - Straight Endwall for Pipe Arch**
- B-8 - Concrete Lined Ditch**
- B-9 - Typical Stabilized Ditch Section**
- DR-130 - Frame and Grate for Mountable Curb and Gutter**
- ST-202 - Mountable Curb with Gutter**
- ST-210 - Standard Concrete Sidewalk**
- DR-130 - Frame and Grate for Mountable Curb and Gutter**

DRAWING B-4
REINFORCED CONCRETE HEADWALL

DRAWING B-5
AREA DRAIN

DRAWING B-6
STRAIGHT ENDWALL FOR CIRCULAR PIPE

DRAWING B-7
STRAIGHT ENDWALL FOR PIPE ARCH

DRAWING B-8
CONCRETE LINED DITCH

DRAWING B-9
TYPICAL STABILIZED DITCH SECTION

**FRAME AND GRATE FOR
MOUNTABLE CURB AND GUTTER**

DR-130

MOUNTABLE CURB WITH GUTTER

ST-202

STANDARD CONCRETE SIDEWALK

ST-210

FRAME AND GRATE FOR MOUNTABLE CURB AND GUTTER

DR-130

APPENDIX C
PORTLAND MAJOR THOROUGHFARE PLAN

MAJOR THOROUGHFARE PLAN MAP